Gravatt, Dan

From: Gravatt, Dan
Sent: Monday, March 11, 2013 9:30 AM
To: Rabenau, Marie; Singletary, DeAndre
Subject: West Lake Landfill: FINAL IA documents and cost estimate
Attachments: USGS Decision Memo FINAL.docx; USGS-Statement of Work - Westlake FINAL.docx

Marie, attached are the final SOW and decision memo for the IA on West Lake. They incorporate the budget numbers I got from John Schumacher at USGS (forwarded to you previously). Total funding amount is $50k. Please route them for Cecilia's signature and funding.

Sincerely,
Daniel R. Gravatt, PG
US EPA Region 7 SUPR/MOKS
11201 Renner Boulevard, Lenexa, KS 66219
Phone (913)-551-7324

Principles and integrity are expensive, but they are among the very few things worth having.

From: Rabenau, Marie
Sent: Wednesday, February 27, 2013 3:06 PM
To: Gravatt, Dan; Singletary, DeAndre
Subject: RE: West Lake Landfill: revised draft IA documents and cost estimate for USGS

Dan: Please get an itemized SOW from USGS which will include their itemized costs.

From: Gravatt, Dan
Sent: Wednesday, February 27, 2013 10:19 AM
To: Singletary, DeAndre
Cc: Rabenau, Marie
Subject: West Lake Landfill: revised draft IA documents and cost estimate for USGS

DeAndre, I have revised the scope of work and decision memo for the IA with USGS. Per Tonya's guidance, there is no true IGCE for the IA; costs are estimated through a table in the decision memo. I have filled this table out estimating a budget of about $49k that includes about $10k for lab analytical costs to support future split groundwater sampling we would do. I still haven't heard definitely from John S. that their lab can do these splits for Ra, Th, U but it seems likely so I built the task and associated costs into the SOW. If you agree with the costs and scope, we can start moving this through concurrence.

The revised documents are on the H: drive at H:\REGION SHARE\West Lake Schedule Tracker

Thanks,
Daniel R. Gravatt, PG
US EPA Region 7 SUPR/MOKS
11201 Renner Boulevard, Lenexa, KS 66219
Phone (913)-551-7324

Principles and integrity are expensive, but they are among the very few things worth having.

STATEMENT OF WORK

Technical Support for Groundwater Investigations at the West Lake Landfill Site.

1. BACKGROUND INFORMATION

The West Lake Landfill Site is on a parcel of approximately 200 acres located in the northwestern portion of the St. Louis metropolitan area. It is situated approximately one mile north of the intersection of Interstate 70 and Interstate 270 within the limits of the city of Bridgeton in northwestern St. Louis County. The Missouri River lies about 1.5 miles to the north and west of the Site.

The Site consists of the Bridgeton Sanitary Landfill (Former Active Sanitary Landfill) and several inactive areas with sanitary and demolition fill that have been closed. Land use at the site and the surrounding areas in Earth City is industrial.

Other facilities which are not subject to this response action are located on the 200-acre parcel including concrete and asphalt batch plants, a solid waste transfer station, and an automobile repair shop.

The Site was used agriculturally until a limestone quarrying and crushing operation began in 1939. The quarrying operation continued until 1988 and resulted in two quarry pits. Beginning in the early 1950s, portions of the quarried areas and adjacent areas were used for landfilling municipal solid waste (MSW), industrial solid wastes, and construction/demolition debris. These operations were not subject to state permitting because they occurred prior to the formation of the Missouri Department of Natural Resources (MDNR) in 1974. Two landfill areas were radiologically contaminated in 1973 when they received soil mixed with leached barium sulfate residues.

The barium sulfate residues, containing traces of uranium, thorium, and their long-lived daughter products, were some of the uranium ore processing residues initially stored by the Atomic Energy Commission (AEC) on a 21.7-acre tract of land in a then undeveloped area of north St. Louis County, now known as the St. Louis Airport Site (SLAPS), which is part of the St. Louis Formerly Utilized Sites Remedial Action Program managed by the U.S. Army Corps of Engineers.

Reportedly, 8,700 tons of leached barium sulfate residues were mixed with approximately 39,000 tons of soil and then transported to the Site. According to the landfill operator, the soil was used as cover for municipal refuse in routine landfill operations.

The geology of the landfill area consists of Paleozoic-age sedimentary rocks overlying Pre-Cambrian-age igneous and metamorphic rocks. The Paleozoic bedrock is overlain by unconsolidated alluvial and loess deposits of recent (Holocene) age. Alluvial deposits of varying thickness are present beneath Areas 1 and 2. The landfill debris varies in

thickness from 5 to 56 feet in Areas 1 and 2, with an average thickness of approximately 30 feet in Area 2. The underlying alluvium increases in thickness from east to west beneath Area 1. The alluvial thickness beneath the southeastern portion of Area 1 is less than 5 feet (bottom elevation of 420 ft/amsl) while the thickness along the northwestern edge of Area 1 is approximately 80 feet (bottom elevation of 370 ft/amsl). The thickness of the alluvial deposits beneath Area 2 is fairly uniform at approximately 100 feet (bottom elevations of 335 ft/amsl).

During the RI investigations, groundwater was generally encountered in the underlying alluvium near or immediately below the base of the landfill debris. Isolated bodies of perched water were encountered in 2 of the 24 soil borings drilled in Areas 1 and 6 of the 40 borings drilled in Area 2 as part of the RI field investigations. The perched water generally occurs in small isolated units at depths varying from 5 to 30 feet below ground surface. Monthly groundwater levels measured in various landfill wells indicate that only a very small amount of relief (less than a foot) exists in the natural alluvial water table surface. The regional direction of groundwater flow is northerly within the Missouri River alluvial valley, parallel or sub-parallel to the river alignment. However, the leachate collection system for the Former Active Sanitary Landfill creates a localized cone of depression that extends across the eastern half of the Site and includes the water table underlying Area 1.

Vertical hydraulic gradients were calculated using piezometer clusters. The vertical hydraulic gradients for the shallow alluvium to intermediate or deep alluvium and for deep alluvium to shallow bedrock are very small and vary from slightly downward to slightly upward.

II. OBJECTIVE AND SCOPE

The EPA is requesting assistance from the USGS to conduct technical support of the supplemental PRP-lead investigations including assisting in scoping investigations, reviewing data, and determining background levels of uranium, thorium and radium in groundwater at and surrounding the West Lake Landfill. The technical support may consist of performance of specific tasks which USEPA contractors have neither the expertise or cannot provide at reasonable cost to EPA.

This work assignment includes technical review of documents to provide expert advice on topics such as hydrogeology, geochemistry, water quality, solute transport, or groundwater modeling of which USGS has known expertise.

III. WORK ASSIGNMENT TASKS

The USGS shall furnish personnel and services required to provide assistance in reviewing historical data that has been collected by PRPs. This review will assist the EPA in determining data gaps essential to determining background radionuclide concentrations in groundwater at and around the site, identifying the appropriate methodologies for

addressing data gaps, reviewing work plans generated for performance of the methodologies, and evaluating the data resulting from field activities. Additionally, personnel shall be provided to participate and support the EPA in updating the community of efforts at public events. Finally, USGS may provide radiological analytical support for split samples for uranium, thorium and radium isotopes that EPA may collect during future groundwater sampling events, through USGS' contract laboratories, if it can be demonstrated that the analytical capabilities of the contract laboratory (ies) are equivalent to those being used by the responsible parties for their radiological analyses.

Tasks

1. Project Planning and Support
2. Community Relations
3. Field Investigations
4. Sample Analysis
5. Analytical Support and Data Validation
6. Data Evaluation
7. Assessment of Risks
8. Treatability Study/Pilot Testing
9. Remedial Investigation Report
10. Remedial Alternatives Screening
11. Remedial Alternatives Evaluation
12. FS Report and RI/FS Report
13. Post RA Support
14. Negotiation Support
15. Administrative Record
16. Close Out

TASK 1 PROJECT PLANNING AND SUPPORT

This task includes work efforts related to project initiation, management, and support. Activities required under this task include the following, as applicable:

1.1 The USGS shall participate in a scoping meeting with EPA to discuss the work assignment.

1.2 The USGS shall prepare a work plan of support activities.

1.3 Based on EPA's review of the work plan, the USGS may be called upon to participate in negotiations with EPA on the work plan and to revise the work plan as a result of these negotiations or comments made regarding the work plan.

1.4 The USGS shall prepare, if needed, a Field Sampling Plan (FSP) that describes the number, type, and locations of samples, the type of analyses required, and the method that will be used to collect them.

1.5 The USGS shall prepare, if needed, a site-specific Quality Assurance Project Plan (QAPP) in accordance with EPA QA/R-5. The plan shall describe the data quality objectives and the measures necessary to achieve them.

1.6 The USGS shall perform site-specific project management including:

- Establishment and maintenance of necessary work assignment files
- Perform contract administration functions associated with this work assignment
- Provide quarterly reporting and invoices
- Monitor costs and performance
- Coordinate staffing and other support activities to perform the work assignment tasks in accordance with the Statement of Work (SOW) including Team subcontractors and other subcontractors
- Attend necessary work assignment meetings

1.7 The USGS shall accommodate any external audit or review mechanism that EPA may require.

TASK 2 COMMUNITY RELATIONS

USGS staff will attend and participate in technical meetings and community meetings, as requested by EPA, to help explain USGS interpretations of site data.

TASK 3 FIELD ACTIVITIES

NA

TASK 4 SAMPLE ANALYSES

NA

TASK 5 ANALYTICAL SUPPORT AND DATA VALIDATION

USGS may provide radiological analytical support for groundwater split samples for uranium, thorium and radium isotopes that EPA may collect during future groundwater sampling events, through USGS' contract laboratories, if it can be demonstrated that the analytical capabilities of the contract laboratory (ies) are equivalent to those being used by the responsible parties for their radiological analyses. Previously, the PRP used Eberline Services' Oak Ridge, TN laboratory for their radiological analyses. EPA's split samples cannot be analyzed at the same lab that is analyzing the PRPs' samples. EPA may collect up to ten (10) split samples during each quarterly groundwater sampling event performed by the responsible parties in 2013. Analytical methods include Ra-226 by EPA method 903.0MOD (alpha spec), Ra-228 by 904.0MOD, Th by DOE EML TH-01, and U by DOE EML U-02. USGS will not perform fieldwork or data validation for the groundwater split sampling or analyses.

TASK 6 DATA EVALUATION

This task includes work efforts related to the evaluation of analytical and field data. The data is to be in a form compatible with EPA's computer systems so that it can be entered into a Region 7 database. Activities required under this task include the following:

6.1 The USGS shall provide technical expertise pertaining to USGS collected and interpreted data (if any) and reviews of hydrologic and geochemical data collected and published by other agencies or companies. Areas of evaluation are expected to include hydrogeology, geochemistry (including background levels), water quality, solute transport, and/or groundwater modeling.

6.2 The USGS shall provide their evaluation of the data to EPA as a USGS letter-type administrative report or letter.

TASK 7 ASSESSMENT OF RISKS

NA

TASK 8 TREATABILITY STUDY/PILOT TESTING

NA

TASK 9 REMEDIAL INVESTIGATION REPORT

NA

TASK 10 REMEDIAL ALTERNATIVE SCREENING

NA

TASK 11 REMEDIAL ALTERNATIVE EVALUATIONS

NA

TAKS 12 FS REPORT AND RI/FS REPORT

The USGS shall provide technical assistance in the review and evaluation of the PRP's Supplemental Feasibility Study reports and a ROD Amendment, if needed.

TASK 13 POST REMEDIAL ACTION SUPPORT

NA

TASK 14 NEGOTIATION SUPPORT

NA

TASK 15 ADMINISTRATIVE RECORDS

NA

TASK 16 WORK ASSIGNMENT CLOSE OUT

This task includes efforts related to work assignment close out. Activities required under this task include the following:

16.1 Upon notification by EPA, the USGS shall begin all internal procedures necessary to close out the work assignment including any file duplication, distribution, storage, or archiving per the contract requirements.

16.2 The USGS shall return documents identified to EPA or other document repositories as directed.

IV. WORK ASSIGNMENT PERIOD OF PERFORMANCE

March 22, 2013 to December 30, 2015

V. SCHEDULE OF DELIVERABLES/MILESTONES

1.6	Quarterly Reports/Invoices	Throughout period
5	Analytical Data Packages	As requested (up to 3 events)
6.1	Data Evaluation	Throughout period
12	Data Evaluation	Throughout period

VI. PEFORMANCE CRITERIA

The USGS's deliverables will be inspected by the government for acceptability. Unacceptable deliverables will be returned to the USGS with comments and directions for necessary corrections or rework which may be applicable.

VII. ACCEPTANCE CRITERIA

The following are the acceptance criteria for the deliverables under this work assignment.

TASK	DELIVERABLE/SERVICE	CRITERIA
1.6	Quarterly Reports/Invoices	Narrative of specific task and subtask activities sufficient enough for work

		assignment manager to evaluate the work assignment progress.
5	Analytical Data Package	In accordance with pre-existing EPA QAPP.
6.1	Data Evaluation	Timely, complete, and accurate review and evaluation of data results and conclusions.
12	Data Evaluation	Timely, complete, and accurate review and evaluation of data results and conclusions.

VIII. EPA CONTACTS

Project Manager	Dan Gravatt	913-551-7324
Project Officer	Marie Rabenau	913-551-7968

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: March 11, 2013

SUBJECT: DECISION MEMORANDUM: Interagency Agreement (IA) with The United States Geological Survey (USGS) DW14-

FROM: Cecilia Tapia, Director
Superfund Division

TO: Interagency Agreement Shared Service Center

PROJECT TITLE

Hydrogeology Support for the West Lake Landfill Superfund Site

JUSTIFICATION

The type and characteristics of the work needed falls under the purview of the United States Geological Survey (USGS). The U.S. Environmental Protection Agency (EPA) considered using existing contracts, such as the Region 7 Environmental Collection and Analysis Program, the Architect and Engineering Services (AES) Contract, the Superfund Technical Assessment and Response Team (START), and the Emergency and Rapid Response Services (ERRS). However, due to the nature of the contracts, several of these alternatives were not suitable for the work needed. The AES contract, which was most suited for the project's needs, was weighed against using an IA with the USGS.

Due to the specialized expertise needed to perform the specified tasks, an IA with the USGS would be the most effective and cost efficient vehicle to conduct these specified activities. Analysis of site hydrogeology and regional background concentrations of radionuclides requires knowledge and expertise that the AES contractor does not have at their disposal. The costs for the AES contractor to subcontract these activities would cost more than having the activities performed under an IA with USGS.

PURPOSE

Under this IA, the USGS will provide technical and hydrogeologic support to EPA at the West Lake Landfill Site. The USGS will be tasked under this IA to perform technical assistance and analytical services for EPA groundwater split samples for radium, uranium and thorium for supplemental feasibility studies. These tasks will include document review, data analysis and interpretation, providing expert recommendations, participation in technical meetings, and participation in community meetings.

BACKGROUND

The West Lake Landfill Site is on a parcel of approximately 200 acres located in the northwestern portion of the St. Louis metropolitan area. It is situated approximately one mile north of the intersection of Interstate 70 and Interstate 270 within the limits of the city of Bridgeton in northwestern St. Louis County. The Missouri River lies about 1.5 miles to the north and west of the Site.

The Site consists of the Bridgeton Sanitary Landfill (Former Active Sanitary Landfill) and several inactive areas with sanitary and demolition fill that have been closed. Land use at the site and the surrounding areas in Earth City is industrial.

Other facilities which are not subject to this response action are located on the 200-acre parcel including concrete and asphalt batch plants, a solid waste transfer station, and an automobile repair shop.

The Site was used agriculturally until a limestone quarrying and crushing operation began in 1939. The quarrying operation continued until 1988 and resulted in two quarry pits. Beginning in the early 1950s, portions of the quarried areas and adjacent areas were used for landfilling municipal solid waste (MSW), industrial solid wastes, and construction/demolition debris. These operations were not subject to state permitting because they occurred prior to the formation of the Missouri Department of Natural Resources (MDNR) in 1974. Two landfill areas were radiologically contaminated in 1973 when they received soil mixed with leached barium sulfate residues.

The barium sulfate residues, containing traces of uranium, thorium, and their long-lived daughter products, were some of the uranium ore processing residues initially stored by the Atomic Energy Commission (AEC) on a 21.7-acre tract of land in a then undeveloped area of north St. Louis County, now known as the St. Louis Airport Site (SLAPS), which is part of the St. Louis Formerly Utilized Sites Remedial Action Program managed by the U.S. Army Corps of Engineers.

Reportedly, 8,700 tons of leached barium sulfate residues were mixed with approximately 39,000 tons of soil and then transported to the Site. According to the landfill operator, the soil was used as cover for municipal refuse in routine landfill operations.

The geology of the landfill area consists of Paleozoic-age sedimentary rocks overlying Pre-Cambrian-age igneous and metamorphic rocks. The Paleozoic bedrock is overlain by unconsolidated alluvial and loess deposits of recent (Holocene) age. Alluvial deposits of varying thickness are present beneath Areas 1 and 2. The landfill debris varies in thickness from 5 to 56 feet in Areas 1 and 2, with an average thickness of approximately 30 feet in Area 2. The underlying alluvium increases in thickness from east to west beneath Area 1. The alluvial thickness beneath the southeastern portion of Area 1 is less than 5 feet (bottom elevation of 420 ft/amsl) while the thickness along the northwestern edge of Area 1 is approximately 80 feet (bottom elevation of 370 ft/amsl). The thickness of the alluvial deposits beneath Area 2 is fairly uniform at approximately 100 feet (bottom elevations of 335 ft/amsl).

During the RI investigations, groundwater was generally encountered in the underlying alluvium near or immediately below the base of the landfill debris. Isolated bodies of perched water were encountered in 2 of the 24 soil borings drilled in Areas 1 and 6 of the 40 borings drilled in Area 2 as part of the RI field investigations. The perched water generally occurs in small isolated units at depths varying from 5 to 30 feet below ground surface. Monthly groundwater levels measured in various

landfill wells indicate that only a very small amount of relief (less than a foot) exists in the natural alluvial water table surface. The regional direction of groundwater flow is northerly within the Missouri River alluvial valley, parallel or sub-parallel to the river alignment. However, the leachate collection system for the Former Active Sanitary Landfill creates a localized cone of depression that extends across the eastern half of the Site and includes the water table underlying Area 1.

Vertical hydraulic gradients were calculated using piezometer clusters. The vertical hydraulic gradients for the shallow alluvium to intermediate or deep alluvium and for deep alluvium to shallow bedrock are very small and vary from slightly downward to slightly upward.

REQUESTED ACTION

A specific set of work tasks will be performed by USGS to (a) analyze, provide feedback on, interpret and evaluate hydrologic and geochemical data in support of determining uranium, thorium and radium background contaminant levels in groundwater; (b) provide expert recommendations on groundwater hydrology and contaminant issues that may arise during the ongoing Supplemental SFS evaluations and preparation of the subsequent ROD amendment; and (c) provide radiological analytical support for groundwater split samples for uranium, thorium and radium isotopes that EPA may collect during future groundwater sampling events, through USGS' contract laboratories, if it can be demonstrated that the analytical capabilities of the contract laboratory (ies) are equivalent to those being used by the responsible parties for their radiological analyses.

STATUTORY AUTHORITY

The statutory authority for entering into this IA is Section 105(a)(4) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 U.S.C. 9601 et seq., Public Law 96-510, December 11, 1980), as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 (Public Law 99-499, October 17, 1986), and Executive Order 12580.

FUNDS AVAILABILITY

This IA will provide $50,000 to the USGS for technical and hydrogeological support at the West Lake Landfill Superfund Site.

PROJECT PERIOD

The project period for this IA action (duration of IA work activity) is March 22, 2013 to December 30, 2015. The total IA project period is expected to be March 22, 2013 to December 30, 2015.

PRE-AWARD COSTS

N/A

BUDGET - TRAVEL

I have verified with John Schumacher from the USGS that the proposed travel is necessary for the project and the IA is not for the purpose of augmenting USGS travel funds.

BUDGET - INDIRECT COSTS

$19,959

BUDGET

Budget Categories	EPA Itemization of This Action	Itemization of Total Project Cost to Date
(a) Personnel	$19,400	
(b) Fringe Benefits		
(c) Travel	$1,523	
(d) Equipment		
(e) Supplies	$4,934	
(f) Procurement/Assistance		
(g) Construction		
(h) Other	$4,184	
(i) Total Direct Charges	$30,041	
(j) Indirect Costs	$19,959	
(k) Total	$50,000	

PAYMENTS

For this disbursement agreement, repayments will be made quarterly.

EQUIPMENT/PROPERTY

The USGS and/or its contractors are NOT authorized to purchase personal property/equipment under this IA. Title to personal property/equipment acquired totally or in part with Superfund Trust Fund having an aggregate fair market value of $1,000 or more at the end of the project period, including contractor-acquired equipment, will remain vested with the EPA except for personal property/equipment comprising part of the remedial or response action and necessary for the continued functioning of the response action. In that case, EPA will relinquish its interest in the personal property/equipment at the time of installation and no reimbursement to the Trust Fund will be required.

SPECIAL CONDITIONS

Billing/Payment

When requesting payments, a breakdown of the cost associated with the billing request must be provided to the EPA Project Officer. This information should be adequate to allow the EPA Project Officer to determine that costs billed to EPA are necessary and reasonable. If the information is not provided, the EPA Project Officer will notify the Financial Management Division to suspend or charge back the payment.

Progress Reporting

The USGS shall provide a summary of activities that occurred within 30 days of the end of each federal fiscal quarter.

Indirect Cost Rate

The indirect cost rate for the proposed work with USGS is 39.9183%.

Superfund Cost Recover Audit

The site will be tracked site-specifically with an assigned site spill identifier number. Please refer to the attached Statement of Work (SOW), page 3 Documentation and Accounting.

Compliance with Quality Assurance Guidelines

USGS will submit a site-specific Quality Assurance project Plan for the EPA's review and approval, if needed.

PROJECT OFFICER CERTIFICATION STATUS

Marie Rabenau is a certified EPA IA Project Officer.

HUMAN SUBJECTS

N/A

PROJECT / BUDGET PERIOD AND PERIOD OF FUNDS AVAILABILITY

The budget and project periods will be from March 22, 2013 to December 30, 2015.

FOREIGN ACTIVITIES APPROVAL

N/A

RECOMMENDATION

After reviewing all the information and alternatives, the project team determined that an IA with the USGS is the most efficient and economical alternative and will provide the highest quality technical support on the West Lake Landfill Superfund Site. Therefore, it is in the best interest of the government for the USGS to provide the geologic and hydrologic expertise needed to complete the specified tasks for this Superfund site.

Project Manager Signature	Typed Name and Title	Date
	Dan Gravatt Remedial Project Manager	

	Superfund Division	
Project Officer Signature	**Typed Name and Title** Marie Rabenau Project Officer Superfund Division	**Date**
Recommending Signature	**Typed Name and Title** DeAndre Singletary Branch Chief Superfund Division	**Date**
Recommending Signature	**Typed Name and Title** Robert W. Jackson Deputy Director Superfund Division	**Date**
Approval Signature	**Typed Name and Title** Cecilia Tapia Director Superfund Division	**Date**

Attachment: Statement of Work